STUDENTS CORNER'S
RESEARCH ARTICLE

Frequency and risk factors of internet addiction in medical students: A cross-sectional study

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Abstract

Objective: To find out the frequency of internet addiction and to determine the risk factors associated with such addiction in medical students.

Methods: The descriptive cross-sectional study was conducted at the Rawalpindi Medical University, Rawalpindi, Pakistan, from July 2018 to August 2019, and comprised medical students from all academic years aged 18-25 years who had been using the internet for at least the preceding two years. Data was collected using a self-administered questionnaire. Data was analysed using SPSS 25.

Results: Of the 380 subjects, 37(9.7%) had no addiction, while 343(90.3%) had some level of addiction; 222(58.4%) mild, 115(30.3%) moderate, and 6(1.6%) severe. Online friendships, online relationships, online chatting, online shopping, online games and online series/movies were significant risk factors ($p<0.05$).

Conclusion: The frequency of internet addiction was found to be high among medical students, but it was mostly of the mild type.

Keywords: Frequency, Internet, Medical students, Risk factors. (JPMA 71: 2111; 2021)

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Introduction

The internet is a device designed to open the doors for research among academic agencies of any nature. Many people are unaware of this new concept of addictive use of internet and are unprepared to manage it.[1] Rapid expansion of the internet has given better opportunities for information and intercommunication. The overzealous use of the internet by individuals has led to the emergence of the concept of internet addiction.[2]

Internet addiction commonly refers to an individual's inability to control their desire for the use of the internet, including any compulsive behaviour which eventually causes marked distress and functional impairment in daily life.[3] Various research studies in Western and Asian setups insinuate that the risk of internet addiction is escalating among the young population.[3] Internet addiction has at least three subtypes: excessive gaming, sexual preoccupations, and e-mail/text messaging. All of the variants consist of four components: excessive use, withdrawal, like causing feelings of anger, tension or depression when the computer is unreachable, tolerance, such as the need for better computer equipment, more software, or more hours of use, and negative repercussions, which comprises arguments, lying, social isolation and fatigue.[4] Anecdotal reports suggested that internet addiction is comparable to drug abuse causing impairment in academic, social and occupational aspects of lives.[5] Internet addiction is not yet considered a distinct disorder and is as an area in need of further research.[6] Extreme infiltration of technology into remote areas has not spared even the developing countries.[7] The absence of large-scale epidemiological studies and differences in the use of diagnostic criteria have caused complications in establishing the actual frequency of internet addiction.[8]

College students are more vulnerable to developing internet dependence than other members of society. This can be ascribed to multiple factors, such as availability of time, unlimited access to the internet, psychological and developmental characteristics of young adulthood, inadequate or no parental supervision, an expectation of internet/computer use as some educational courses are internet-dependent, and the internet provides a route for diversion from stress.[9] According to Internet World Stats, there are 3.36 billion internet users in the world.[10]

The internet has so many uses that one cannot differentiate between its benefits and ill effects on our social lives. The current study was planned to understand the pattern, frequency and risk factors of internet addiction among medical students.

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Subjects and Methods

The descriptive cross-sectional study was conducted at the Rawalpindi Medical University, Rawalpindi, Pakistan, from July 2018 to August 2019. After approval from the institutional ethics review board, the sample size was calculated assuming 43% frequency of internet addiction[11] with 95% confidence interval (CI) and 5% absolute precision using OpenEpi calculator.[12] The sample was raised using stratified random sampling technique, taking an equal number of subjects from among medical students of all the five academic years aged 18-25 years.

After taking written informed consent from the participants, data was collected using a self-administered questionnaire covering demographic data, patterns of internet use, Young's internet addiction test (YIAT) and risk factors. Cronbach's alpha value of the questionnaire was 0.89, indicating its reliability. YIAT 20 is a 20-item questionnaire scored on a five-point Likert scale. The higher the score, the greater the level of addiction it indicates; 0-19 = normal range, 20-49 = mild, 50-79 = moderate, and 80-100 = severe.[13]

Data was analysed using SPSS 25. Frequency and percentage were calculated for socio-demographic variables and internet usage patterns. Association between risk factors and internet addiction was worked out in terms of odds ratio (OR)[11] which was calculated using chi-square test. P<0.05 was considered significant.

Results

Of the 380 subjects, there were 76(20%) from each academic year, 142(37.4%) were males and 238(62.6%) were females (Table 1). Overall, 37(9.7%) subjects had no addiction, while 343(90.3%) had some level of addiction; 222(58.4%) mild, 115(30.3%) moderate, and 6(1.6%) severe. Among the males, 70(49.3%) had mild, 58(40.8%) had moderate, 3(2%) had severe and 11(7.7%) had no addiction. Among the females, 152 (63.8%) had mild, 57(24%) had moderate, 3(1.2%) had severe and 26(11%) had no addiction. Participants using the internet for 0-5 hours were 255(67.1%), and of them 218(85.4%) were addicted, while those spending 5-10 hours were 125(32.9%) and all of them (100%) showed addiction. Out of 342(90%) mobile phone users, 309(90.3%) showed addiction (Table 2).

Online friendships, online relationships, online chatting, online shopping, online games and online series/movies were significant risk factors (p<0.05), while gender, being a hostel resident, preferred way of interaction, and using internet for studies had no significant relationship with internet addiction (p>0.05) (Table 3).

Table-1: Socio-demographic characteristics.

Variable	Groups	n (%)
Gender	Male	142 (37.4)
	Female	238 (62.6)
Age	18	20 (5.3)
	19	65 (17.1)
	20	76 (20)
	21	75 (19.7)
	22	83 (21.8)
	23	48 (12.6)
	24	13 (3.4)
Hostel residents	Hostel residents	150 (39.5)
	Non-hostel residents	230 (60.5)
Father's occupation	Business	65 (17.1)
	self-employed	48 (12.6)
	Private	71 (18.7)
	Government	190 (50)
	Not applicable	6 (1.6)
Mother's occupation	Housewife	277 (72.9)
	Working	101 (26.6)
	Not applicable	2 (0.5)

Table-2: Patterns of internet usage.

Variables	Groups	n (%)
Internet use per day	0-5 hours	225 (67.1)
	5-10 hours	125 (32.9)
Most common location	Residence	228 (60)
	Cyber café	2 (0.5)
	class room	11 (2.9)
	Library	3 (0.8)
	Hostel	131 (34.5)
	Other places	4 (1.1)
Gadget	Desktop	7 (1.8)
	Laptop	28 (7.4)
	Mobile phone	342 (90)
	Tablet	3 (0.8)
Mode of internet access	WiFi	225 (67.1)
	Mobile data	109 (28.7)
	Broad band	16 (4.2)

Discussion

The internet has become one of the necessities of lives. It exposes us to its hazardous effects as well. A study conducted in Tamil Nadu, India, showed that students with internet addiction had a higher risk of developing social phobia and depression compared to the non-addicts.[14]

The current study showed that the frequency of internet addiction was 90.3%, out of which 58.4% had mild, 30.3% had moderate, and 1.6% had severe addiction. Another local study Showed 83.2% mild, 16.1% moderate and 0.6% severe addiction rate.[15] Another study concluded that 36.7% subjects manifested internet addiction, mostly at a mild level.[16] This diversity in frequency is because of different sample sizes and study types. However, they all

Table-3: Association between risk factors and internet addiction.

Variables		n (%)	Normal n (%)	With Addiction n (%)	Odds Ratio (95%CI)	*p*-value
Gender	Male	142 (37.4)	11 (7.7)	131 (92.2)	0.68 (0.32-1.43)	0.31
	Female (ref)	238 (62.6)	26 (10.9)	212 (89.1)	1.00	
Hostel residents	Yes	150 (39.5)	12 (8)	138 (92)	1.40 (0.68- 2.8)	0.35
	No (ref)	230 (60.5)	25 (10.9)	205 (89.1)	1.00	
Preferred way of interaction	Virtual	63(16.5)	4 (6.3)	59 (93.6)	0.42 (0.12-1.4)	0.15
	In-Person (ref)	317 (83.4)	33 (10.4)	284 (89.6)	1.00	
Online Friends	Yes	73 (19.2)	1 (1.4%)	72 (98.6)	9.56 (1.2- 70.9)	0.007
	No (ref)	307 (80.8)	36 (11.7)	271 (88.3)	1.00	
Online Relationship	Yes	37 (9.7)	0	37 (100)	---	0.03
	No	343 (90.3)	37 (10.8)	306 (89.2%)		
Prefer Online chatting	Yes	170 (44.7)	9 (5.3)	161 (94.7)	2.75 (1.2-6.0)	0.009
	No (ref)	210 (55.3)	28 (13.3)	182 (86.7)	1.00	
Internet for studies	Yes	334 (87.9)	3 (0.9)	331 (99.1)	0.86 (0.29-2.5)	0.8
	No(ref)	46 (12.1)	4 (8.7)	42 (91.3)	1.00	
Online Shopping	Yes	180 (47.4)	10 (5.6)	170 (94.4)	2.65 (1.2-5.6)	0.009
	No (ref)	200 (52.6)	27 (13.5)	173 (86.5)	1.00	
Online Games	Yes	159 (41.8)	9 (5.7)	150 (94.3%)	2.41(1.1-5.2)	0.02
	No (ref)	221 (58.2)	28 (12.7)	193 (87.3%)	1.00	
Online Series/Movies	Yes	294 (77.4)	20 (6.8)	274 (93.2%)	3.37 (1.6- 6.7)	<0.000
	No (ref)	86 (22.6)	17 (19.8)	69 (80.2%)	1.00	

CI: Confidence interval.

revealed that mild addiction was more prevalent than moderate and severe addictions.

Patterns of internet usage showed that participants in the current study used the internet at their residence, including the boarders. Most of the people (90%) were using smartphones for internet access. Wi-fi usage was more common among non-hostel residents and mobile data was common among hostel residents. Buying internet packages is an extra financial burden. A study showed same results.[17] People using smartphones are more prone to developing an addiction than those using feature phones.[2]

Internet addiction appears to have a male predominance,[18] which was also seen in our study. Similar pattern was seen in a Chinese meta-analysis and a Turkish study.[19,20] This may be because males are more into gaming and online relationships, as seen in the current study. College students are more likely to be involved in online friendships, which ultimately evolve into online relationships.[21] The current study revealed 9.5 times greater risk of internet addiction by engaging into online friendships. A study discovered that this behaviour can be explained by the fact that at this time, there may be improper parental supervision, unrestrained access to the internet in college campuses, and ample time.[13]

Boarders were seen to have more frequency than non-boarders in the current study, which is in agreement with earlier findings.[22] The reasons might be loneliness, privacy for internet activities, and lack of supervision.[23] Internet is a great source of information for every sort of student and they use it for academic purposes as well, but it is still counted as one of the predisposing factors because it exposes one to the other aspects of internet as well. In one study, moderate users and possible addicts used the internet mostly for social networking (59.7%), downloading media files (18.9%) and online gaming (12.3%) compared to academic purposes (0.1%).[23] But in the current study, the use of the internet for study purposes was much more than for online gaming and media purposes because of the demands of medical education.

Online gaming and online series/movies showed a strong association in the current study. This may be because they cause a constant impulse to finish a particular game or series, and everything is available just a click away. According to the World Health Organisation (WHO), gaming addiction is a separate disorder now.[24] Online shopping is associated with 2.6 times higher risk for the development of internet addiction. A study linked excessive online shopping to internet addiction, saying that emotional instability and materialism predisposes to internet addiction which has a positive impact on reckless online buying.[25]

The current study has several limitations. The sample related to a single centre and the findings are not generalisable. The risk factors were selected randomly without detailed analysis.

Conclusion

The frequency of internet addiction was found to be high among medical students, and mild addiction was more common than moderate or severe. Internet addiction was found to be an emerging problem which requires attention. Significant risk factors included online relationships, online gaming and online series/movies.

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